AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims of the application:

LISTING OF CLAIMS:

Claims 1 to 7 (Cancelled).

8. (New) A process for producing a flat product made of a zirconium alloy having a Kearns factor FT of between 0.30 and 0.70 comprising:

smelting an ingot of zirconium alloy, the ingot having a composition, in percentages by weight, of

Nb = 0.5 to 3.5%

Sn = 0 to 1.5%

Fe = o to 0.5%

Cr + V = 0 to 0.3%

S = 0 to 100 ppm

O = 0 to 2000 ppm

Si = 0 to 150 ppm, a balance being zirconium and impurities resulting from the smelting;

forming the ingot;

performing on the ingot at least one hot rolling pass in order to obtain a flat product, a final of the hot-rolling passes being carried out between 810 - 20Nb% and 1100 °C and not being followed by any quenching operation;

annealing the flat product not exceeding a temperature of 800°C; and

performing at least one cold-rolling/annealing cycle wherein the annealing cycle does not occur above 800°C.

9. (New) The process according to claim 8, wherein the Nb content of the alloy is from 0.5 to 1.5%.

10. (New) The process according to claim 8, wherein the final of the hot rolling passes is carried out between 820 – 20Nb% and 1100 °C.

11. (New) The process according to claim 8, wherein the final of the hot rolling passes is performed at a temperature within ±130°C of a temperature at which the alloy undergoes a $\alpha+\beta \rightarrow \beta$ transition.

12. (New) The process according to claim 11, wherein the final hot rolling pass is performed between 900 and 1030°C.

13. (New) A flat product comprising:

a body of a zirconium alloy having a Kearns factor FT of between 0.30 and 0.70, wherein the body is formed by the process of a process

smelting an ingot of zirconium alloy, the ingot having a composition, in percentages by weight, of

Nb = 0.5 to 3.5%

Sn = 0 to 1.5%

Fe = o to 0.5%

Cr + V = 0 to 0.3%

S = 0 to 100 ppm

O = 0 to 2000 ppm

Si = 0 to 150 ppm, a balance being zirconium and impurities resulting from the smelting;

forming the ingot;

performing on the ingot at least one hot rolling pass in order to obtain a flat product, a final of the hot-rolling passes being carried out between 810 - 20Nb% and 1100 °C and not being followed by any quenching operation;

annealing the flat product not exceeding a temperature of 800°C; and

performing at least one cold-rolling/annealing cycle wherein the annealing cycle does not occur above 800°C.

14. (New) The flat product according to claim 13, wherein the product is formed into a spacer grid of a light-water nuclear power plant reactor.

15. (New) A process for producing a flat product made of a zirconium alloy having a Kearns factor FT of between 0.30 and 0.70 comprising:

smelting an ingot of zirconium alloy, the ingot having a composition, in percentages by weight, of

Nb = 0.5 to 3.5%

Sn = 0 to 1.5%

Fe = o to 0.5%

Cr + V = 0 to 0.3%

S = 0 to 100 ppm

O = 0 to 2000 ppm

Si = 0 to 150 ppm, a balance being zirconium and impurities resulting from the smelting;

forming the ingot;

performing on the ingot at least one hot rolling pass in order to obtain a flat product, a final of the hot-rolling passes being carried out between 810 - 20Nb% and 1100 °C and not being followed by any quenching operation; and

performing at least one cold-rolling/annealing cycle wherein the annealing cycle does not occur above 800°C.

16. (New) The process according to claim 15, wherein the Nb content of the alloy is from 0.5 to 1.5%.

17. (New) The process according to claim 15, wherein the final of the hot rolling passes is carried out between 820 – 20Nb% and 1100 °C.

18. (New) The process according to claim 15, wherein the final of the hot rolling passes is performed at a temperature within ±130°C of a temperature at which the alloy undergoes a $\alpha+\beta \rightarrow \beta$ transition.

19. (New) The process according to claim 18, wherein the final hot rolling pass is performed between 900 and 1030°C.